

REMARKS

By this Amendment, claims 1, 3 and FIGS. 1a-b are amended, and claim 2 is canceled without prejudice of disclaimer to the subject matter therein. No new matter is added. After Entry of this Amendment, claims 1 and 3-6 will remain pending in the patent application. Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

In the Official Action, Figures 1a-b were objected to by the Examiner. In response, the drawings have been amended in the manner suggested by the Examiner. Namely, Figures 1a-b have been designated with the legend --Prior Art--. A replacement sheet including the change to Figures 1a-b is enclosed herewith. Accordingly, reconsideration and withdrawal of the objection to the drawings are respectfully requested.

Claim 1 was objected to by the Examiner for failing to provide antecedent basis to the recitation "the material". In response, claim 1 is amended to remove this recitation. It is respectfully submitted that the amendment to claim 1 obviates the rejection. Accordingly, reconsideration and withdrawal of the objection to claim 1 are respectfully requested.

Claims 1-6 were rejected under 35 U.S.C. §102(b) based on Hong (U.S. Pat. No. 5,969,384). The rejection is respectfully traversed.

Claim 2 is canceled without prejudice or disclaimer, thus rendering moot the rejection of claim 2.

Claim 1 is patentable over Hong at least because this claim recites a method of fabricating a flash memory device comprising, *inter alia*, forming a tunnel oxide layer on a semiconductor substrate, at least a portion of the tunnel oxide layer being made of one selected from the group consisting of Y_2O_3 , Al_2O_3 , HfO_2 , and ZrO_2 with a conduction band energy level lower than that of SiO_2 . Hong does not teach or suggest a method including this feature. Hong does not describe at least this feature. Therefore, Hong does not teach or suggest each and every feature recited by claim 1 and, as a result, cannot anticipate this claim.

Hong discloses a method for fabricating a flash memory that includes tunnel oxide layers 42a-b formed on the source/drain regions, an oxide layer 40, a polysilicon floating gate 44, a polysilicon layer 46, and a control gate 48. However, Hong does not teach or suggest a tunnel oxide layer having a portion with a conduction band energy level lower than that of SiO_2 , much less a tunnel oxide layer made of Y_2O_3 , Al_2O_3 , HfO_2 , or ZrO_2 .

The Office Action alleged that Hong discloses in FIG. 2F and in col. 2, lines 57-60, a tunnel oxide layer having a conduction band energy level lower than that of SiO₂. Applicant respectfully disagrees and submits that Hong merely discloses that “tunnel oxide layers 42a and 42b having a thickness between about 50Å and about 100Å and thinner than the oxide layer 40 are formed covering exposed portions of source regions 38 and drain region 36, respectively.” (See col. 2, lines 53-60). Hong is silent about the characteristics of the conduction band of the oxide layers 42a-b and their relative position with respect to that of SiO₂. Therefore, for at least this reason, Hong cannot anticipate claim 1.

Claims 3-6 are patentable over Hong at least by virtue of their dependency from claim 1, and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejection of claims 1 and 3-6 under 35 U.S.C. §102(b) based on Hong are respectfully requested.

Claim 1 was rejected under 35 U.S.C. §102(e) based on Forbes *et al.* (U.S. Pat. No. 6,781,876) (hereinafter “Forbes”). The rejection is respectfully traversed.

Claim 1 is patentable over Forbes at least because this claim recites a method of fabricating a flash memory device comprising, *inter alia*, forming a tunnel oxide layer on a semiconductor substrate, at least a portion of said tunnel oxide layer being made of one selected from the group consisting of Y₂O₃, Al₂O₃, HfO₂, and ZrO₂ with a conduction band energy level lower than that of SiO₂. Forbes does not teach or suggest a method including this feature. Forbes does not describe at least this feature. Therefore, Forbes does not teach or suggest each and every feature recited by claim 1 and, as a result, cannot anticipate this claim.

Forbes discloses a floating gate transistor of a memory cell that includes a source/drain 205/210, a floating gate electrode 215, a control gate electrode 220, and a gate insulator 215 interposed between the floating gate 215 and the substrate 230. (See col. 6, lines 22-26 and FIG. 2). Forbes further discloses that the gate insulator 225 may be made of amorphous SiC. (See col. 7, lines 9-10). However, Forbes is silent about a gate insulator made of Y₂O₃, Al₂O₃, HfO₂, or ZrO₂. Applicant notes that claim 1 is amended to positively recite the features of claim 2, which were not rejected by the Office Action. Therefore, claim 1 is patentable over Forbes.

Accordingly, reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §102(e) based on Forbes are respectfully requested.

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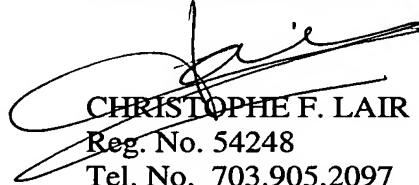
All objections and rejections having been addressed, Applicant respectfully submits that the application is in condition for allowance, and a notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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IN THE DRAWINGS:

The attached sheet of drawing includes changes to Figures 1a-b. This sheet replaces the original sheet showing Figures 1a-b. In this new sheet, Figures 1a-b have been designated by the legend --Prior Art--.